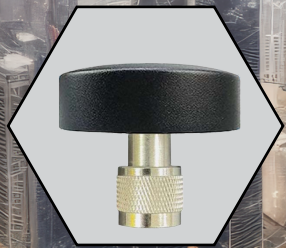
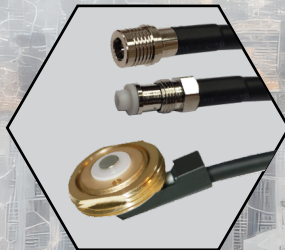




ANTENNA SOLUTIONS

Mobile Portable Fixed Station OEM-Custom Design



QUALITY

HONESTY

INTEGRITY

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em wave inc. committed to help our customers communicate through innovative RF and wireless solutions, by exceeding your expectations for quality antenna design, performance, and reliability.

"Finally someone is building a better antenna solution."

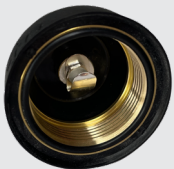


Flex "X"-Nut Antenna

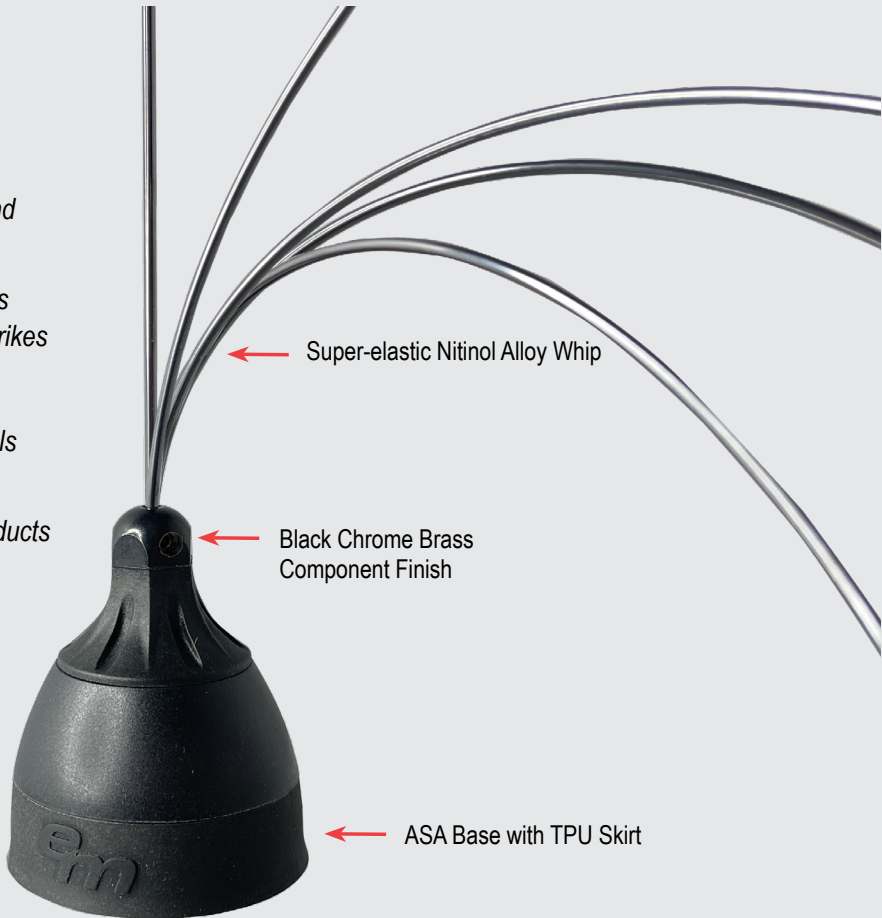
EM-MFLX132-FT **132-1000 MHz**

Flex "X"-Nut®

- Field Tunable for precise spot frequency and bandwidth requirements
- Super-elastic, Ultra-flexible radiator reduces potential damage from multiple/repeated strikes
- IP67: Weather-proof, Corrosion-proof
- All Brass and UV resistant polymer materials
- High Conductivity and greater operational bandwidth than traditional Chrome Nut products



Dual-Seal Gaskets



Super-elastic Nitinol Alloy Whip

Black Chrome Brass Component Finish

ASA Base with TPU Skirt

Frequency Band	EM-MFLX132-FT			
	132 MHz	155 MHz	450 MHz	746-894 MHz
VSWR	<1.5:1 center			
Gain	2 dBi			
Bandwidth @ (2:1 VSWR)	14 MHz	21 MHz	100 MHz	148 MHz
Power Rating	150 W			
Overall Length	21.93 in. (557 mm)	18.43 in. (468 mm)	6.6 in. (167 mm)	4.17 in. (106 mm)



VHF NMO Mount Antennas

144-174 MHz EMFLX-M10008-WB Wide Band

e/m-Flex®

- Dual-seal construction provides IP67 Rated waterproof, dirt & dust proof protection for superior reliability
- Durable black chrome finish provides high conductivity and quality / covert appearance



NO
Tuning Required

Frequency Band	144-174 MHz
VSWR	<1.8:1
Gain	2 dBi
Power Rating	150 W
Overall Length	19-3/8 in. (491 mm)



EMFLX-M10008-WB



e/m-Flex®
Poly Spring

VHF/UHF NMO Mount Antennas

108-520 MHz M10001 Series Broadband Quarterwave

e/m-Flex®



EMFLX-M10001 EM-M10001 EM-M10001-LS

- Dual-seal construction provides IP67 Rated waterproof, dirt & dust proof protection for superior reliability
- Durable black chrome finish provides high conductivity and quality / covert appearance



Field
Tunable

	EMFLX-M10001	EM-M10001	EM-M10001-LS
Frequency Band	108-520 MHz		
VSWR	(15 MHz Bandwidth @150 MHz) <2.0:1 (50 MHz Bandwidth @450 MHz) <1.5:1 (100 MHz Bandwidth @450 MHz) <2.0:1		
Gain	2 dBi		
Power Rating	150 W		
Overall Length	@108 MHz: 29 in. (737 mm) @150 MHz: 19 3/4 in. (502 mm) @450 MHz: 7 3/4 in. (197 mm)		



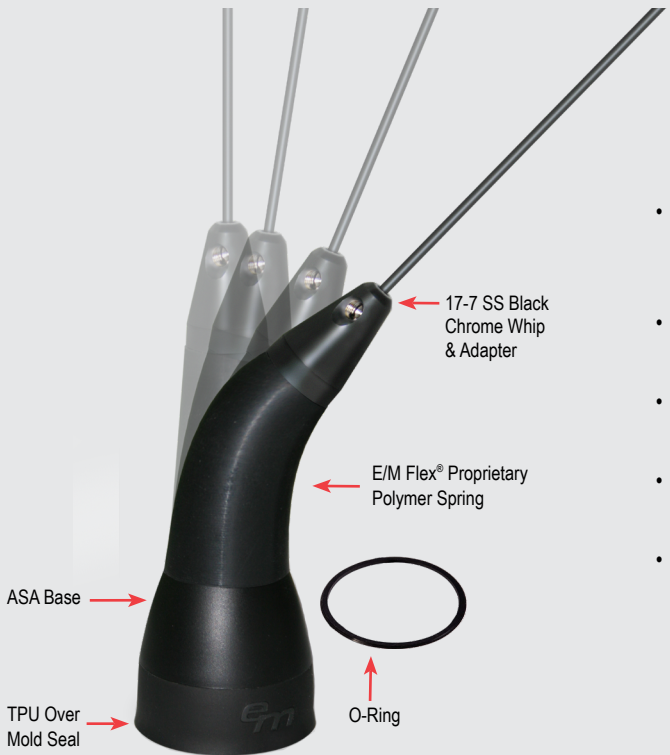
VHF NMO Mount Antennas

M10004 Series 132-174 MHz

M10014 Series 144-174 MHz



e/m-Flex®



- E/M Wave proprietary polymer spring delivers 150 watt power rating, low noise operation & resilient impact flexibility for lifetime durability without cracking or structural failure
- Dual-Seal construction provides IP67 Rated waterproof, dirt & dust-proof ingress protection for superior reliability
- Durable black chrome finish provides high performance conductivity and quality / covert appearance
- High-Impact, UV Resistant, Dual-Shot ASA/TPU molded base eliminates pitting & corrosion
- Hand torque installation & removable spring-whip maintains tamper-proof ASA base to NMO mount connection during automatic car wash



	VSWR (Center Freq.)	Gain	Ground Plane Independent	Overall Length (max.)
Frequency Band	132-174 MHz			
EMFLX-M10004	<1.5:1	3 dBi	NO	55 7/16 in. (1408 mm)
EMFLX-M10004-GPI	<1.2:1	2 dBi	YES	50 in. (127 mm)
EM-M10004	<1.5:1	3 dBi	NO	55 7/16 in. (1408 mm)
EM-M10004-GPI	<1.2:1	2 dBi	YES	50 in. (127 mm)
EM-M10004-LS	<1.5:1	3 dBi	NO	55 7/16 in. (1408 mm)
EM-M10004-GPI-LS	<1.2:1	2 dBi	YES	55 1/2 in. (141 mm)
Frequency Band	144-174 MHz			
EMFLX-M10014	<1.5:1	3 dBi	NO	46 in. (117 mm)
EMFLX-M10014-GPI	<1.2:1	2 dBi	YES	46 in. (117 mm)
EM-M10014	<1.5:1	3 dB	NO	49.4 in. (125 mm)
EM-M10014-GPI	<1.2:1	2 dBi	YES	45 3/4 in. (116 mm)
EM-M10014-GPI-LS	<1.2:1	2 dBi	YES	55 1/2 in. (141 mm)



EMFLX-Mxxxxx Polymer Spring EM-Mxxxxx Black SS Spring EM-Mxxxxx-LS No Spring
EMFLX-Mxxxxx-GPI Polymer Spring Ground Plane Independent EM-Mxxxxx-GPI Black SS Spring Ground Plane Independent EM-Mxxxxx-GPI-LS No Spring Ground Plane Independent



Special Applications

470-520 MHz T-Band Mobile Antenna



EMFLX-M10013

Superior Performance for Public Safety & Commercial Trunking Applications

- Ultra high performance – VSWR <1.5:1 Max
- Durable ASA base with TPU dust seal and grip ring
- e/m-Flex® Polymer Spring – Premium Black Chrome Finish



	EMFLX-M10013
Frequency Band (Tunable Range)	470-520 MHz
VSWR	<1.5:1 @ 20 MHz Bandwidth
Gain	3 dB
Power Rating	150 W
Overall Length (max)	12.9 in. (327 mm)
Whip Material	17-7 SS, Black Chrome
Spring Material	Black Molded Polymer Alloy
Base Material	ASA with TPU overmold grip ring
Mounting Application	NMO mount

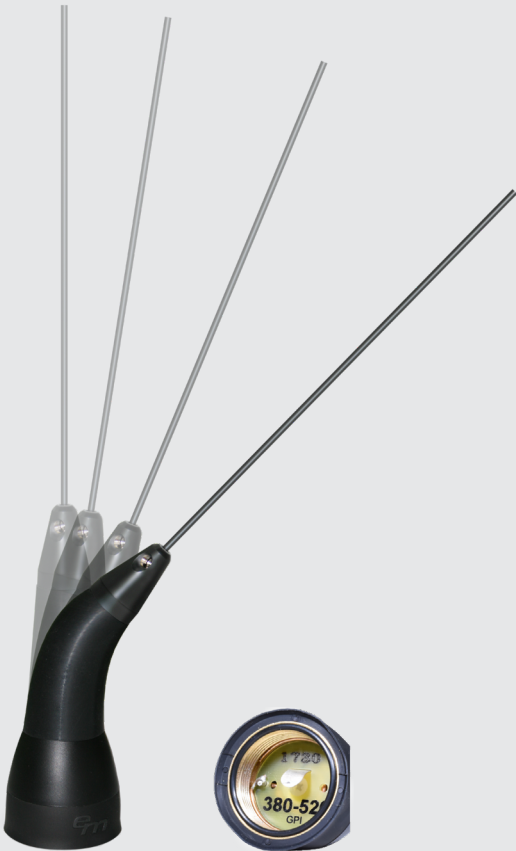
460 MHz Center Frequency

- NMO Mount, Black Chrome Finish
- Flexible Elastomeric Polymer Spring
- O-ring seal for waterproof construction
- Durable ASA base with TPU overmold

Factory Tuned



	EMFLX-M10003-460	EMFLX-M10003-GPI-460
Frequency Band (Tunable Range)	460 MHz	460 MHz
VSWR	<1.5:1, 20 MHz Bandwidth <2.0:1, 40 MHz Bandwidth	<1.5:1, 25 MHz Bandwidth <2.0:1, 40 MHz Bandwidth
Gain	3 dBi	2 dBi
Power Rating	150 W	
Overall Length (max)	12.2 in. (309 mm)	10 5/32 in. (258 mm)
Whip Material	17-7 SS, Black Chrome	
Spring Material	Elastomeric Polymer, Proprietary	
Base Material	ASA with TPU overmold grip ring	



UHF NMO Mount Antennas

M10003 Series 420-470/380-520 MHz

M10007 Series 420-470/440-480 MHz

e/m-Flex®



EM-M10003
EM-M10003-GPI



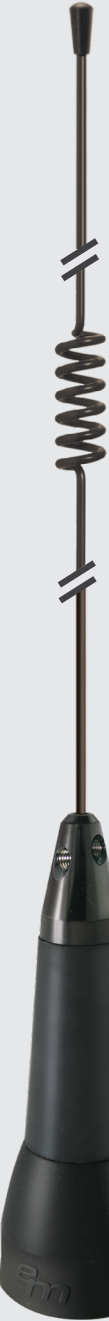
EM-M10003-LS
EM-M10003-GPI-LS

- **M10007** series has one-piece 17-7 SS Open Coil Whip for Reliability and Performance
- Dual-seal construction provides IP67 Rated waterproof, dirt & dust proof protection for superior reliability
- Durable black chrome finish provides high conductivity and quality / covert appearance



EM-M10007-LS

e/m-Flex®



EMFLX-M10007
EMFLX-M10007-GPI



EMFLX-M10003

	Frequency Band (Tunable Range)	VSWR	Gain	Power Rating	Ground Plane Independent	Overall Length (max.)
M10003 Series						
EMFLX-M10003	420-470 MHz	<1.5:1	3 dBi	150 W	NO	14 3/8 in. (365 mm)
EMFLX-M10003-GPI	380-520 MHz	<2:1	2 dBi	150 W	YES	16 1/8 in. (410 mm)
EM-M10003	420-470 MHz	<1.5:1	3 dBi	150 W	NO	14 3/8 in. (365 mm)
EM-M10003-GPI	380-520 MHz	<2:1	2 dBi	150 W	YES	16 1/8 in. (410 mm)
EM-M10003-LS	420-470 MHz	<2:1	3 dBi	150 W	NO	14 3/8 in. (365 mm)
EM-M10003-GPI-LS	380-520 MHz	<2:1	2 dBi	150 W	YES	16 1/8 in. (410 mm)
M10007 Series						
EMFLX-M10007	420-470 MHz	<1.5:1	5 dBi	150 W	NO	38 3/8 in. (975 mm)
EMFLX-M10007-GPI	440-480 MHz	<2:1	5 dBi	150 W	YES	31 1/4 in. (794 mm)
EM-M10007-LS	445-470 MHz	<1.5:1	5 dBi	150 W	NO	38 3/8 in. (975 mm)

700/800 MHz Antennas



	EM-M11017
Frequency Band	698-896 MHz
VSWR	<1.5:1 Typical, <1.6:1 Max
Gain	2 dBi
Power Rating	100 W
Overall Length	3.63 in (92 mm)
Mounting Application	NMO mount

- Resists Impact and Damage from low hanging obstructions
- Industry's Only Low Profile Antenna protected within a rugged flexible housing
- Patented Capacitive Coupled Design. All Brass / Copper Components / Flexible Elastomeric Polymer Housing

Patent No. US 9,520,640



Public Safety
LMR/P25/TETRA
ISM/SCADA/Utilities
Railroad/Train Control



	EM-M11003
Frequency Band	763-869 MHz
VSWR	<2:1
Gain	5 dBi
Power Rating	100 W
Overall Length	14 1/2 in. (368 mm)
Mounting Application	NMO mount

- Rugged One-Piece SS Radiator with Limited "Lifetime Warranty"
- Durable and Highly Conductive Black Chrome Finish
- Tightly Wound Phasing Coil Delivers Flexibility while Resisting Low Hanging Obstructions



	EM-M11009
Frequency Band	746-960 MHz
VSWR	<1.5:1
Gain	2 dBi
Power Rating	100 W
Overall Length	4 in. (102 mm)
Mounting Application	NMO mount

- Broadband Performance Exceeds 214 MHz
- Low Profile Design for Urban Areas where Gain Antennas May not be Required
- Durable ASA Base with TPU Over Mold Grip Eases Antenna Install and Removal for Car Wash



	EM-MX0746
Frequency Band	746-894 MHz
VSWR	1.5:1 typical, 1.9:1 max
Gain	2 dBi
Power Rating	100 W
Overall Length	4 in. (102 mm)
Polarization	Linear, Vertical
Ground Plane	Required
Mounting Application	NMO mount

- Stylish high-impact, dual shot ASA/TPU base
- Insert molded antenna adapter and brass NMO threads truly eliminates mating concerns of dissimilar metals
- Dual seal construction for weatherproof protection

Multi-Band Duplexed Antenna Solutions

Duplexer Specifically Designed to Augment Multi-Band LMR Applications



EM-MBD41000-NJ

- Low Insertion Loss, All Bands
- High Power Handling
- 50 dB Port-to-Port Isolation
- Specifically Designed to Augment Multi-Band LMR Applications
- N Jack Connector

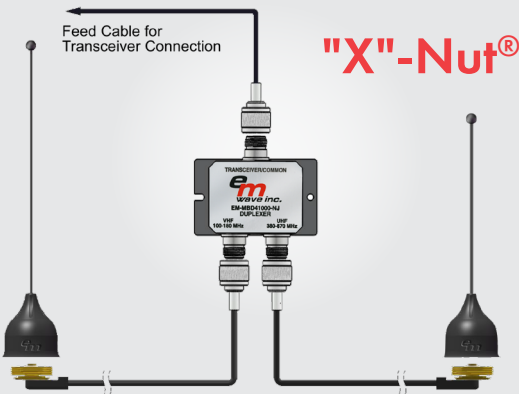
Dual Band/Tri Band/GPS Duplexer Applications / Configurations

Full Duplex/Bi-Directional Operation for Signal Combining or Splitting

Example Configuration #1

Duplexer with
VHF Antenna and 700/800 MHz Antenna

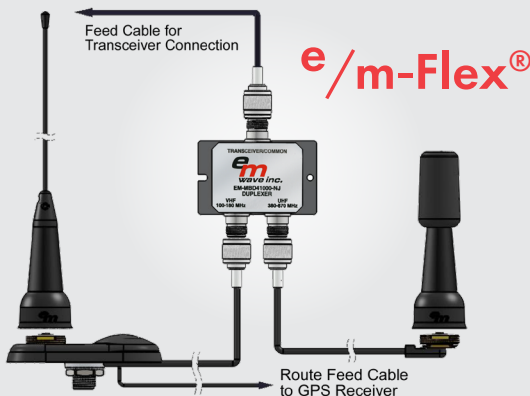
For all LMR / Public Safety Bands
VHF through 870 MHz



Example Configuration #2

Duplexer with VHF Antenna, Combined with a GPS Combo Mount
and a UHF/ 700-800 MHz Dual Band Antenna

For all LMR / Public Safety Bands operating in VHF 108-174
MHz, UHF 450-520 MHz and 746-870 MHz including GPS



700/800/900 MHz Antennas

	EM-M11009	EM-M11003	EM-M11008	EM-M11010	EM-M11004	EM-M11014
Frequency Band	746-960 MHz	763-869 MHz	806-894 MHz	850-902 MHz	890-960 MHz	902-928 MHz
VSWR	<1.5:1	<2:1	<2:1	1.5:1 typ. 1.6:1 max.	<2:1	<2:1
Gain	2 dBi	5 dBi	5 dBi	5 dBi	5 dBi	6 dBi
Power Rating	100 W					
Overall Length	4 in. (102 mm)	14.5 in. (368 mm)	14 in. (356 mm)	13.7 in. (348 mm)	12.5 in. (318 mm)	22 1/4 in. (565 mm)
Whip Material	17-7 Stainless Steel, Black Chrome					
Base Material	ASA with TPU overmold grip ring					
Mounting Application	NMO mount					

Applications
Public Safety/LMR/P25/TETRA
ISM/SCADA/Utilities, Railroad/Train Control

- Durable and Highly Conductive Black Chrome Finish
- Tightly Wound Phasing Coil Delivers Flexibility while Resisting Low Hanging Obstructions
- Open Coil Whip Affords Higher Power Handling Capability
- Brass BETA's Increase Operational Bandwidth up to 15%
- Durable ASA Base with TPU Overmold Grip Eases Antenna Install and Removal

EM-M11009 746-960 MHz

EM-M11003 763-869 MHz

EM-M11010 850-902 MHz

EM-M11008 806-894 MHz

EM-M11004 890-960 MHz

EM-M11014 902-928 MHz



"X"-Nut® Quarterwave Antennas

Exploded view showing all "X"-Nut® components



Gain	2.0 dBi
VSWR	1.5:1 typical
Power Rating	100 W
Polarization	Linear, Vertical
Ground Plane	Required
Whip Material Finish	300 Series stainless steel black chrome plated
Base Material	ASA/TPU overmold grip ring
Mounting Application	NMO mount
Corrosion	Salt and UV resistant



- Stylish high-impact, dual shot ASA/TPU base
- Insert molded antenna adapter and brass NMO ring truly eliminates mating concerns of dissimilar metals
- Dual seal construction for weatherproof protection
- Delivers up to 10% more operational bandwidth than comparable low-end chrome nut designs
- Durable black chrome finish for high conductivity and quality appearance
- Easy hand-installation for positive RF connection... No tools required!



EM-MX0746 746-894 MHz
Height: 4 in. (102 mm)

EM-MX0450 450-520 MHz UHF
Height: 6.56 in. (166 mm)

EM-MX0152 152-162 MHz VHF
Height: 18.75 in. (476 mm)

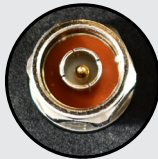
EM-MX0108-FT 108-960 MHz Field Tunable
Height: 31.75 in. (806 mm)

Combination Mounts/GPS/GNSS Antennas

GNSS Puck Antenna
1575 MHz



EM-AG13007-NP



Low-Profile N Plug



EM-AG13007-NP	
Frequency Band	GNSS (L1)
VSWR	<2.0:1
Gain	30 dB Typical at 5 Vdc
Noise Figure	2.0 dB max
Operational Voltage (Vdc)	3.0 - 5.5 V
Current Drain (Idc)	6.0 - 20.0 mA
Connector	N plug

GPS/GNSS (L1) Timing Antenna
1574.4-1610 MHz



EM-BGT13006-TJ
(includes mast mount kit)



EM-BGT13005-TJ
3/4 in. NPT and 1"-14 marine
mount compatible

EM-BGT13005-TJ	
Frequency Band	1575.42 - 1610 MHz
VSWR	<2.0:1
Gain	30 ± 3 dB at 1575.42 MHz 29 ± 3 dB at 1610 MHz
Noise Figure	3.5 dB max
Operational Voltage (Vdc)	3.0 - 5.5 V
Current Drain, Idc	8 ± 3 mA
GPS Connector	TNC Jack



TNC Jack Connector

Impact resistant
ASA radome

Rugged die-cast
aluminum base

Combination Mounts/GPS/GNSS Antennas

NMO/GPS/GNSS Combination Mount
RG-58/U or Low Loss 195 Cable

- Low-Profile aesthetics for reduced visibility
- UV Stabilized, High Impact ASA housing
- Rugged aluminum die cast base for high strength mechanical mounting and reliability
- Silicone Rubber gasket and dual O-ring seals for waterproof, high pressure car wash (IP66) applications



EM-MG11006-SP (-195)
EM-MG11022-SP (-195)

Galileo/QZSS/GPS/GNSS
30dB Magnet Mount Antenna

High-impact ASA Housing
UV Stabilized



Low-Profile
0.63 x 1.8 x 1.9 in



SMA male plug
Connector

EM-MG13004-SP

Frequency Band	EM-MG11006-SP EM-MG11006-SP-195	EM-MG11022-SP-195	EM-MG13004-SP
	GPS (L1)	GPS/GNSS	GPS/GNSS
	1575.42 ± 3 MHz	1575-1615 MHz	1575-1615 MHz
VSWR	<2.0:1		
Gain	30 dB Typical at 5 Vdc	28 dB Typical	27±3 dB (@3V) 30±3 dB (@5V)
Connector	SMA Plug		
Cable GNSS/GPS	GNSS/GPS		RG-174/U
Cable, NMO	RG-58/U / LL-195		N/A

LTE Combo Antenna Solution

EM-MGLTE-ICK01 (Includes)	Kit Description
EM-MG11006-SP-195	NMO/GPS Combo Mount, SMA (GPS) & RP-SMA (LTE) plug connectors
EM-M11001-195	NMO Mount, RP-SMA Connector
EM-M20007	LTE Poly Pro flexible antenna
EMSRP-058	SMA RP Connectors (Loose)

OEM-Direct Replacement
External/Vehicle Mounted
LTE Combo Antenna Solution



Multi-Band Mobile Antennas

LTE Glass Mount Antenna
698-960 MHz/1710-2700 MHz

- Ultra Low Profile - Less than 1/4 inch thick, length 4.8 in. 122 mm
- Easy installation with 3M™ adhesive mount on glass or other non-conductive surface
- Direct connect - SMA Male Connector on 10 ft. Low-loss RG-174 cable
- IP67 Ingress Rated: water, dirt & dust-proof



SMA Male Plug/Brass Gold Plated

EM-A40011-SP



LTE-Poly Pro Flexible Antenna
698-960 MHz/1710-2700 MHz



EM-M20007

- Flexible Polymer Housing Resists Impact and Damage from Low Hanging
- Dust and O-Ring Seals for Reliable Dirt, Dust and Waterproof Performance (IP66)
- E/M Wave - Patent No. US 9,520,640



	EM-A40011-SP	EM-M20007
Frequency Band	698-960 MHz / 1710-2700 MHz	
VSWR	698-960 MHz, 3.5:1 max 1710-2700 MHz, 2.0:1 max	1.5:1 typical, 2:1 max
Gain	1.3 dBi @ 698-960 MHz 2.2 dBi @ 1710-2100 MHz	2 dBi @ 698-960 MHz 3 dBi @ 1710-2150 MHz 5 dBi @ 2150-2700 MHz
Power Rating	10 W	100 W
Ground Plane	Not Required	Required



Multi-Band Mobile Antennas

Tri-Band Roof Mount Antenna
150-162/450-490/763-870 MHz

- Stylish High-Impact, Dual Shot ASA/TPE Base Eliminates Ingress
- Insert Molded NMO Brass Base for Superior Performance, Eliminating Dissimilar Metal Corrosion
- High Strength, Impact-Resistant 17-7 Black Chrome SS Spring
- Hand Torque Installation Maintains Reliable RF Connection
- Removable Whip Protects NMO Contacts During Vehicle Wash
- Durable Black Chrome Finish for High Conductivity, Quality, and Covert Appearance



EM-M43002

	EM-M43002	EM-M22001
Frequency Band	150-162 MHz / 450-490 MHz / 763-870 MHz	450-520 MHz / 746-960 MHz
VSWR	<2:1 (150-162, 450-470, and 763-870 MHz) <2.5:1 (470-490 MHz)	1.5:1 typical, 2:1 max
Gain	Utility @ 150-162 MHz 5 dBi @ 450-490 MHz 4 dBi @ 763-870 MHz	2 dBi
Power Rating	100 W	150 W
Ground Plane	Required	Required



EM-M22001

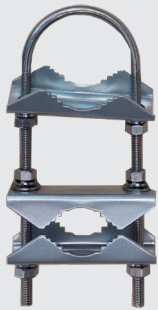
- Low Profile, Flexible, Black Covert Appearance
- Patented Multi-Band Performance to Comply
- IP66 Ingress Rated: water, dirt & dust-proof for reliable, high performance operation
- E/M Wave - Patent No. US 9,520,640



Base & Fixed Station Antennas

700-800 MHz Fiberglass Base Station Antenna

	EM-BFG11702-NJ
Frequency Band	746-896 MHz
VSWR	<1.5:1
Gain	2 dBi
Power Rating	150 W
Polarization	Vertical
Horizontal HPBW	Omnidirectional
Vertical HPBW	72°, nominal
Connector	Type N Jack
Height	18.1 in. (459 mm)
Width (dia.)	1.6 in. (40.5 mm)



Includes hardware for 1 1/2 inch offset pipe mast mounting

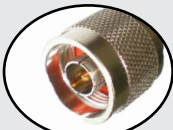
- High strength filament wound fiberglass radome
- High efficiency performance
- High strength filament wound fiberglass radome
- All brass/silver plated feed and radiator structure

ISM Fiberglass Base Station Antenna

EM-BFG11905-NJ
EM-BFG11905-NP
902-928 MHz

	EM-BFG11905-NJ	EM-BFG11905-NP
Frequency Band	902-928 MHz	
VSWR	1.5:1	≤2:1
Gain	5 dBi	
Power Rating	100 W	20 W
Polarization	Vertical	
Horizontal HPBW	Omnidirectional	
Connector	Type N Jack	N Plug
Height	20.7 in.(525 mm)	20.78 in. (528 mm)
Width (dia.)	1.2 in. (31 mm)	0.8 in. (20 mm)

* Includes hardware for 1 1/2 inch offset pipe mast mounting



Type N Plug Connector



Type N Jack Connector



EM-BFG11702-NJ



EM-BFG11905-NJ



EM-BFG11905-NP

Base & Fixed Station Antennas

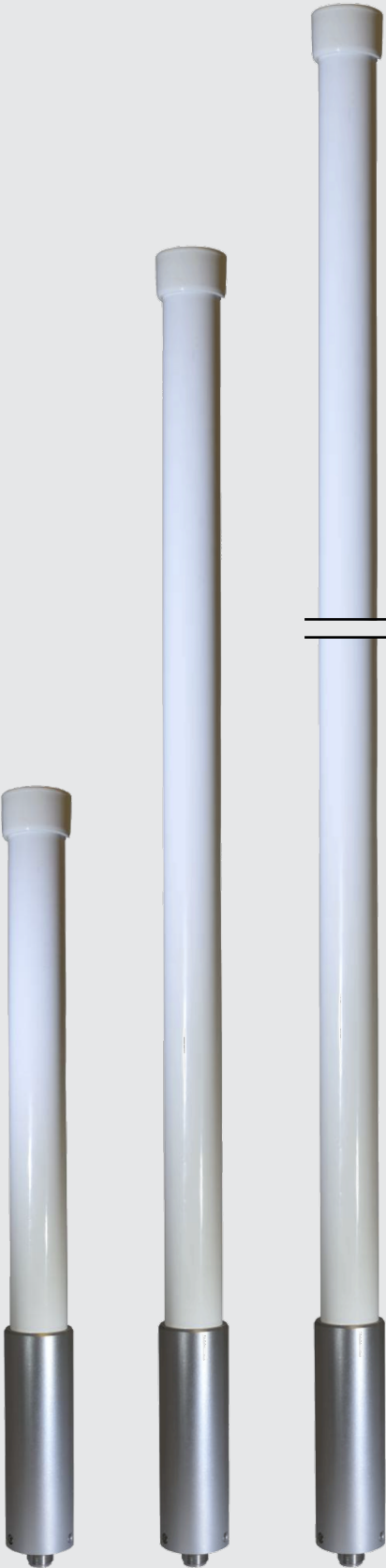
UHF Base Station Antenna

	EM-BFG11402-NJ	EM-BFG11405-NJ	EM-BFG11407-NJ
Frequency Band	450-470 MHz	450-470 MHz Wide Band	450-470 MHz Wide Band
VSWR	2:1		
Gain	2 dBi	5 dBi	7 dBi
Power Rating	150 W		
Polarization	Vertical		
Horizontal HPBW	Omnidirectional		
Vertical HPBW Normal	72°/ 35°/ 20°		
Connector	Type N Jack		
Overall Length x Diameter (max)	21 x 1.6 in. (534 x 40.5 mm)	45 x 1.6 in. (1143 x 40.5 mm)	66 x 1.6 in. (1.67 m. x 40.5 mm)

- High input power handling
- High efficiency performance
- High strength filament wound fiberglass radome
- All brass/silver plated feed and radiator structure



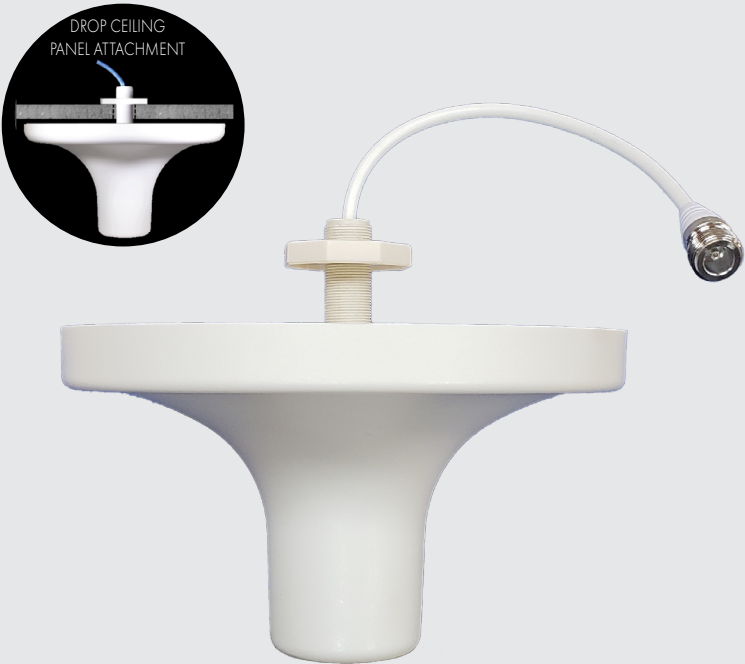
Type N Jack Connector



EM-BFG11402-NJ EM-BFG11405-NJ EM-BFG11407-NJ

Base & Fixed Station Antennas

Multi/Wide Band iDAS Indoor Ceiling Mount Antenna
698-6000 MHz



LTE

PIM Rated

- LTE/4G/5G performance
- Mount through any ceiling panel up to 1-3/8 in.
- Plenum Rated Construction
- Vertically Polarized
- PIM Rated <-150 dBc

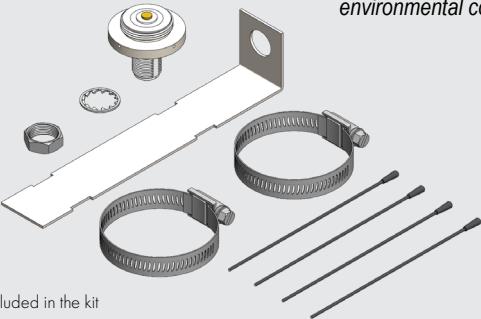
EM-B40002-NJ	
Frequency Band	698-6000 MHz
VSWR	<2:1 698-3500 MHz <2.5:1 3500-6000 MHz
Gain:	698-960 MHz 2 dBi 1710-2100 MHz 3 dBi 2100-2700 MHz 3.5 dBi 3500-3700 MHz 2.5 dBi 5200-5900 MHz 3 dBi
H-Plane HPBW	Omnidirectional
Polarization	Vertical
Power Rating	50 W
PIM Rating (2x43 dBm)	<-150 dBc

Ground Plane Kit For VHF/UHF/800-900 MHz NMO Antennas

	EMBKT-BSA100	EMBKT-BSA800
Frequency	108-520 MHz	800/900 MHz
VSWR	<2:1 @108-135 MHz <1.5:1 @136-520 MHz	<2:1
Power Rating	200 W	200 W
Actual Installed Dimensions	8 x 60 in. (203 x 1524 mm)	8 x 10.83 in. (203 x 275 mm)
Actual Mast OD	1.6 to 2.5 in. (40.6-63.5 mm)	1.6 to 2.5 in. (40.6 - 63.5 mm) max.

Connector Material/Finish
Brass/Nickel Plate

High grade 316 stainless steel and nickel plated brass construction provides durability and resistance to environmental corrosion



*Included in the kit



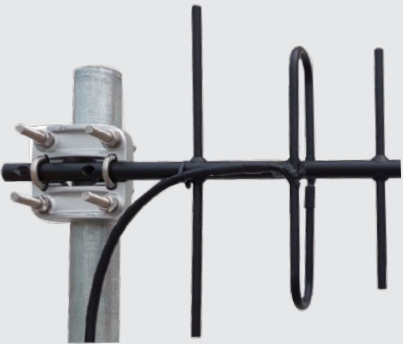
*NMO Antenna Sold Separately
*Mounting Mast Not Included

Base & Fixed Station Antennas

Yagi Fixed Station Antenna

	EM-BY11407-NJ 3 Element	EM-BY11709-NJ 6 Element	EM-BY11410-NJ 7 Element
Frequency Band	450-470 MHz	760-870 MHz	450-470 MHz
VSWR	<1.5:1	<1.5:1	<1.5:1
Gain	7 dBi	9 dBi	10 dBi
Power Rating	250 W	250 W	250 W
Dimensions	16.1 x 13.8 x 2.8 in. 408 x 352 x 72 mm	22.8 x 7.75 x 2.95 in. (580 x 197 x 75 mm)	39 x 13.9 x 3.15 in. (991 x 353 x 80 mm)
Mounting Application	Pole / Mast Mount	Pole / Mast Mount	
Cable Connector Type	Low Loss 400 Type / Type N, Jack		

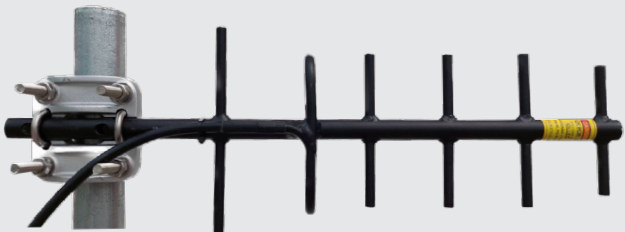
- Rugged Aluminum Construction
- UV and Environmentally Resistant Black Powder Coat Finish
- Boom: 3/4" 6063 Aluminum
- Radiators: 3/8" 6061 Aluminum, Solid Rod
- V or H Polarization Mountable
- All Models are Fully Welded



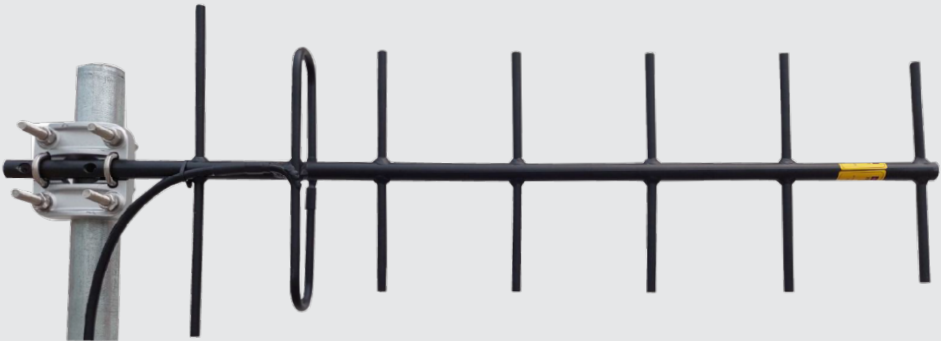
EM-BY11407-NJ



Fully Welded Elements



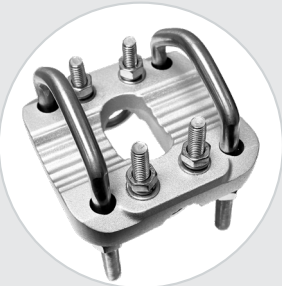
EM-BY11709-NJ



EM-BY11410-NJ



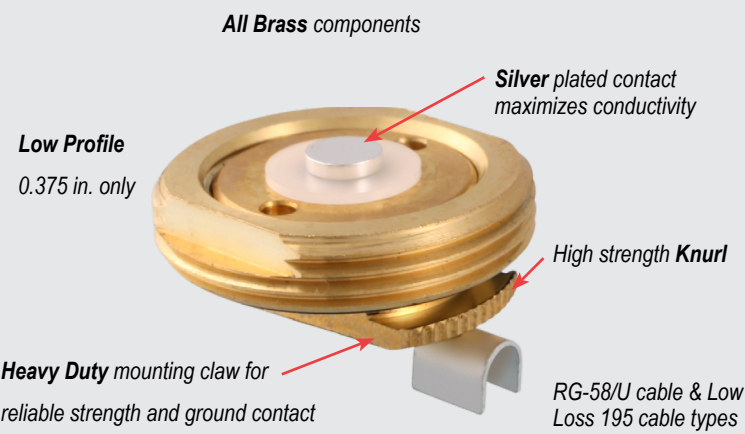
N Jack Connector



Mounting Hardware Included

NMO Mounts and Cable Assemblies

NMO 3/4" Hole Mount Assembly



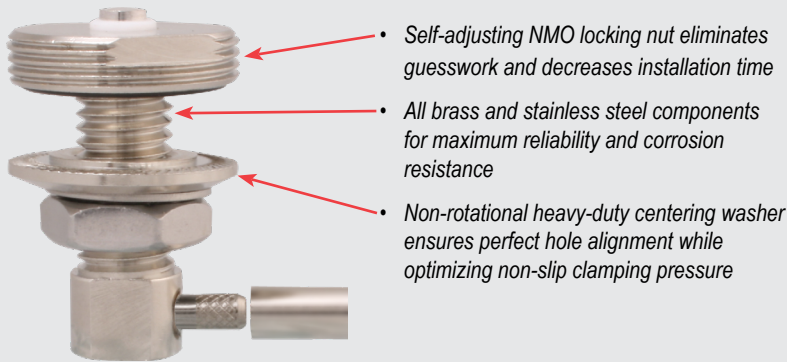
EM-M11001
EM-M11001-058-35

35 ft. Cable Length
Available
Call Sales For Assistance
(216) 453-1160

Attached Cable Models	Standard Low Profile	
	EM-M11001-058	EM-M11001-195
Frequency Band	30-1000 MHz	
VSWR	1.5:1 typical	
Power Rating	100 W @1000 MHz	
Cable Type	RG-58/U	Low Loss 195
Cable Length	17 ft. (5.1 m.) Standard length	
Connector	Sold Separately	
Mounting Material	Brass	

Thick Panel Style NMO Mount

Up to
1/2 in. (12.7 mm)
Thickness



EM-MTR11001

Attached Cable Models	Thick Panel Series	
	EM-MTR11001-058	EM-MTR11001-195
Frequency Band	30-1000 MHz	
VSWR	<1.3:1 Typical	
Power Rating	150 W for VHF 100 W for 700-1000 MHz	
Cable Type	RG-58/U	Low Loss 195
Cable Length	17 ft. (5.1 m.) Standard length	
Connector	Sold Separately	
Mounting Material	Brass & Stainless Steel with Bright Nickel Finish	

Connectors All Connectors Fit RG-58/U & 195 Type Cable



EMPL259-CRIMP

- PL-259 connector solder crimp center pin



EMMP-058

- Mini-UHF male plug connector



EMBP-058

- BNC male plug connector



EMNP-058

- N male plug connector



EMSP-058

- SMA male plug connector



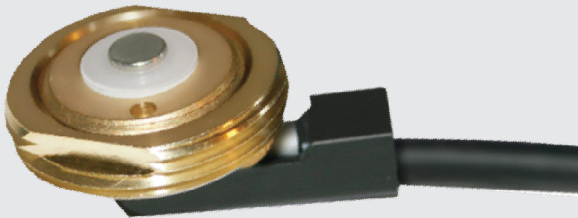
EMTP-058

- TNC male plug connector



EMQP-058

- QMA male plug connector



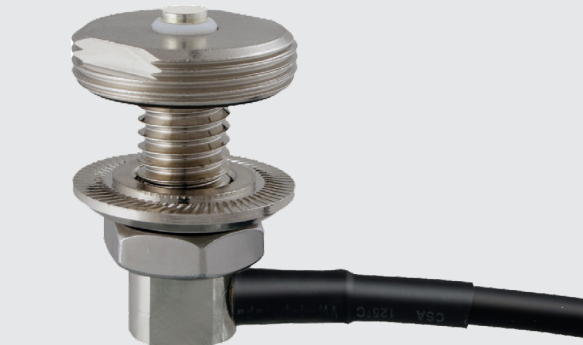
EM-M11001-QP Series
NMO w/ QMA Connector



EM-M11001-FME Series
NMO w/ FME Connector

	EM-M11001-FME-058	EM-M11001-FME-195	EM-M11001-QP-058
Frequency Band	30-1000 MHz		
VSWR	1.5:1 typical		
Power Rating	100 W @1000 MHz		
Cable Type	RG-58/U	Low Loss 195	RG-58/U
Cable Length	17 ft. (5.1 m.) standard length; 35 ft. (10.67 m.) available		
Connector	FME	FME	QMA
Mounting Material	Brass		

Thick Mount FME/QMA Cable Assembly



EM-MTR11001-QP Series
NMO w/ QMA Connector



EM-MTR11001-FME Series
NMO w/ FME Connector

	EM-MTR11001-058	EM-MTR11001-195	EM-MTR11001-FME-058	EM-MTR1101-QP-058
Frequency Band	30-1000 MHz			
VSWR	<1.3:1 typical			
Power Rating	150 W for VHF / 100 W for 700-1000 MHz			
Cable Type	RG-58/U	Low Loss 195	RG-58/U	
Cable Length	17 ft. (5.1 m.) standard length			
Connector	Sold separately		FME	QMA
Mounting Material	Brass and stainless steel with bright nickel finish			

FME Adapter Options *Adapters sold separately



EM-FME-MP
FME to Mini-UHF Plug



EM-FME-PL
FME to PL259 Plug



EM-FME-QP
FME to QMA Plug



EM-FME-TP
FME to TNC Plug



EM-FME-NP
FME to N Plug

Mounts, Brackets & Cable Assemblies

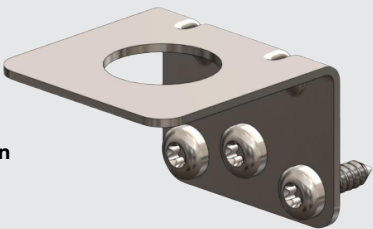
Mounting Brackets for Mirror/Trunk/Fender and Mast Installations



Stainless Steel
Right Angle Mount

- Accommodates 5/8 or 3/4 inch thru hole mounting for Bulkhead N Type, fixed station antennas
- Mate with EM-BSA001 to convert mobile ground plane independent antennas for base station, fixed point applications

	EMBKT-016SS	EMBKT-019SS
Bracket Material	Stainless Steel	
Mounting Hole Size	5/8 in.	3/4 in.



Designed for Trunk
Fender Mount Application

- 304 SS Bracket
- All Stainless Steel Hardware included
- 3/4" Antenna Mount Clearance Hole
- Applications: Vehicular Antenna Trunk Mount

	EMBKT-LMR34
Bracket Material	Stainless Steel
Mounting Hole Size	3/4 in.

5/8 in. NMO Base Station Adapter

EM-BSA001
NMO to N Type Jack

- Frequency independent operation for all NMO type antennas
- Rugged all brass construction with bright nickel plating
- Integrated NMO sealing surface eliminates ingress potential between antenna and mounting surface or bulkhead
- Integrated bulkhead O-ring seal to protect electrical enclosures
- Mounts up to 11/32 in. thickness
- High power handling



Frequency Band	0 to 3000 MHz
VSWR	<1.2:1
Power Rating	200 W
Overall Length	1.54 in. (39 mm)

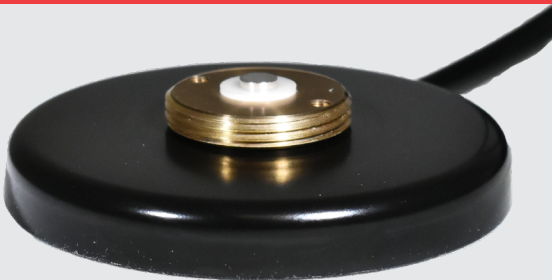
3/4" Flush Mount Black Hole Panel Plugs



EM-HP34
Packaged as a 5 packs

- 3/4" panel hole plug to protect an open single antenna drill hole after NMO mount removal
- Snap-in design for an attractive finish and a secure fit
- Flush head designed for standard 3/4" NMO hole size

Magnet NMO Mount



EM-MAG-058
Magnet Mount

- Magnet Mount Base with NMO mount
- All black, low-profile, 3 in. dia.
- Magnetic Base: Heavy-duty 14 ga. Steel
- Surface Protection: Optional rubber boot

EM-MAG-058-HD
Heavy Duty

EM-MAG-058 EM-MAG-195 EM-MAG-058-FME	EM-MAG-058-HD EM-MAG-195-HD
--	--------------------------------

Frequency Band	Up to 1000 MHz	
Magnetic Pull Force Retention	>30 lb. (13.6 kg.), includes protective UHMW PE pad	>50 lb. (22.7 kg.), includes optional rubber boot
Material Finish	High strength 14 ga. steel, black powder coat	
Mounting Application	NMO mount	
Connector	Sold Separately	
Cable	RG-58/U 17 ft. (5.1 m.) LL 195 type 17 ft. (5.1 m.)	

Mobile/Fixed Station Antennas

- Tamper resistant bulkhead mount type
- Low Profile: Minimizes visual impact for interior / exterior fixed point applications
- Rugged dual seal design for exterior mobile and fixed point installations where ultra-reliable waterproof performance is required
- UV Stabilized, High Impact Radome
- Silicone compression pad provides maximum weatherproof seal against the bulkhead



EM-A11015 (blk)
EM-A11016 (wht)



EM-A11015-SP (blk)
EM-A11016-SP (wht)



EM-A20003-SP (blk)
EM-A20004-SP (wht)



EM-A40001 (blk)
EM-A40002 (wht)

ISM

902-928 MHz

	EM-A11015 (black) EM-A11016 (white)	EM-A11015-SP (black) EM-A11016-SP (white)
Frequency	902-928 MHz	
VSWR	1.5:1, max	
Gain	3 dBi	
Power Rating	10 W	
Polarization	Linear, vertical	
E-Plane	55°, nominal	
H-Plane	Omnidirectional	
Mechanical Specifications		
Height	3 in. (76.2 mm)	
Diameter	1.67 in. (42.4 mm)	
Radiator	PCB	
Mounting Application	5/8 DD x 1/4 in. (6.35 mm) max, Bulkhead/panel mount	3/8 in. (M-10) Hole, Bulkhead
Cable	2 ft. (610 mm) Low Loss 100	
Connector	N Jack (female)	SMA Plug

LTE

698-2700 MHz

	EM-A20003-SP (black) EM-A20004-SP (white)	EM-A40001 (black) EM-A40002 (white)
Frequency Band (1)	2 dBi Gain @ 698-960 MHz	2 dBi Gain @ 746-960 MHz
Band (2)	2 dBi Gain @ 1710-2200 MHz	
Band (3)	3.5 dBi Gain @ 2200-2700 MHz	
VSWR	<2.2:1 @ 698-710 MHz <2:1 @ 710-960 MHz <2:1 @ 1710-2700 MHz	2:1, max
Power Rating	10 W	
Polarization	Linear, vertical	
E-Plane	50°, nominal	35-50°, nominal
H-Plane	Omnidirectional	
Mechanical Specifications		
Height	3 in. (76.2 mm)	
Diameter	1.67 in. (42.4 mm)	
Radiator	PCB	
Mounting Application	3/8 in. (M-10) Hole, Bulkhead	5/8 DD x 1/4 in. (6.35 mm) max, Bulkhead/ panel mount
Cable	2 ft. (610 mm) Low Loss 100	
Connector	SMA Plug	N Jack (female)

Handheld Portable Antennas

Replacement Radio Antenna
For the Following Brands
And More ...



KENWOOD




HARRIS



MOTOROLA


VHF

FREQUENCY	150-174 MHz
VSWR	<2:1
GAIN	Unity
BANDWIDTH	24 MHz
LENGTH	11.2"/284 mm
CONNECTOR	MD, SF, SFK



EM-P90918

FREQUENCY	148-174 MHz
VSWR	<3:1
@ Band Edges	Unity
GAIN	
LENGTH	4.3"/108 mm
CONNECTOR	MD, SF, SFK, SM



EM-P90013

UHF

FREQUENCY	380-520 MHz
VSWR	<2.0:1 Typical <2.6:1 Max at 380 MHz
GAIN	2 dBi
LENGTH	6.1"/153 mm max.
CONNECTOR	MD, SF, SFK



EM-P90016

FREQUENCY	450-470 MHz
VSWR	<2:1
GAIN	Unity
LENGTH	3.7"
CONNECTOR	MD, SF, SFK



EM-P90022

FREQUENCY	698-870 MHz
VSWR	<2:1
GAIN	3 dBi
LENGTH	5.7"
CONNECTOR	MD, SF, SFK



EM-P90110

FREQUENCY	698-870 MHz
VSWR	<2:1
GAIN	2 dBi
LENGTH	4.3"/110 mm
CONNECTOR	MD, SF, SFK



EM-P90111

FREQUENCY	890-960 MHz
VSWR	<2:1
GAIN	2 dBi
LENGTH	4.3"/110 mm
CONNECTOR	MD, SF, SFK



EM-P90222

FREQUENCY	890-960 MHz
VSWR	<2:1
GAIN	3 dBi
LENGTH	5.9"
CONNECTOR	MD




EM-P90220

700/800 MHz

900 MHz


Multi-Band

FREQUENCY	380-520 MHz 698-870 MHz
VSWR	<2:1 typical <2.6:1 Max @ 380 MHz
GAIN	2 dBi
BANDWIDTH	140 MHz 172 MHz
LENGTH	5.3"
CONNECTOR	SF, SFK




EM-P91201

FREQUENCY	136-174 MHz 450-520 MHz 763-870 MHz
VSWR	<2:1 typical; <3:1 @ band edges
GAIN	Unity/0 dBi/2 dBi
LENGTH	9.5"/241 mm
CONNECTOR	MD, SF, SFK




EM-P92401

FREQUENCY	136-174 MHz 762-870 MHz 1575 MHz
VSWR	<2.5:1 typical
GAIN	Unity / 2 dBi
LENGTH	9.05"/230 mm
CONNECTOR	MD, SF, SFK




EM-PG92402

Connector Descriptions




SFK

SMA (f) Kenwood™ Type




SF

SMA (f) Motorola™ Type



MD

(M7x1) for Harris™ Series




SM

SMA (m)

Access Point Antennas


902-928 MHz

FREQUENCY	902-928 MHz
VSWR	<2:1
GAIN	2 dBi
LENGTH	7.7"/196 mm
CONNECTOR	0° & 90°, SR, TR
APPLICATION	WAP Indoor



EM-P90102


FREQUENCY	902-928 MHz
VSWR	<2:1
GAIN	2 dBi
LENGTH	8.0"/203 mm
CONNECTOR	SP, SR
APPLICATION	WAP Indoor



EM-P90114

2.4 - 2.5 GHz


FREQUENCY	2.4-2.5 GHz
VSWR	<2.0:1
GAIN	5 dBi
LENGTH	6.7"/170 mm
CONNECTOR	0° & 90°, SP
APPLICATION	WAP Indoor



EM-P90403

4 G / LTE


FREQUENCY	698-960 MHz 1710-2700 MHz
VSWR	<2:1 typical 3:1 max
GAIN	1/2/3 dBi
LENGTH	7.32"x 1.65"
CONNECTOR	0 & 90° SP
APPLICATION	All 4G/LTE Wireless Access Point



EM-P92202


Tri-Band

FREQUENCY	2.4-2.5 GHz 4.9-5.35 GHz 5.725-5.85 GHz
VSWR	<2.0:1
GAIN	2 dBi
LENGTH	4.2"/107 mm
CONNECTOR	0° & 90°, SR



EM-P92301


FREQUENCY	2.4-2.5 GHz 4.9-5.35 GHz 5.725-5.85 GHz
VSWR	<2.0:1
GAIN	2 dBi
LENGTH	6.2"/157 mm
CONNECTOR	0° & 90°, SR, TR



EM-P92303


Wi-Fi 5/6

FREQUENCY	2.4-2.5 GHz 5.15-7.125 GHz
VSWR	2.0 Max
GAIN	3 dBi@ 2.5 GHz 4.5 dBi@7 GHz
LENGTH	7"/ 178 mm
CONNECTOR	0° & 90° SR



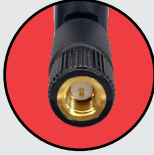
EM-P92305-SR

FREQUENCY	2.4-2.5 GHz 5.15-7.125 GHz
VSWR	2.0 Max
GAIN	2 dBi
LENGTH	3.88"/ 98 mm
CONNECTOR	0° & 90° SR




EM-P92304-SR

Connector Descriptions




SP

SMA Plug




SR


SMA Plug Reverse Polarity




Straight



Right Angle
0° & 90°




Right Angle
Fixed (RA)



TP

TNC Plug



TR

TNC Plug Reverse Polarity

MIMO Antennas

4x4 Wi-Fi 6E MIMO/GNSS RTK Antennas



EM-AG50002 Series

Available Configurations
2x2, 4x4 WiFi 6E MIMO

Electrical Specifications	
Frequency & Gain Port 1-4	2400-2500 MHz 3 dBi, typ. 5100-5835 MHz 1-4 dBi, typ. 5850-7125 MHz 1-4 dBi, typ.
VSWR Port 1-4	<2:1
Impedance All Ports	50 Ohm Nominal
Isolation, Port to Port (1-4)	>10 dB, typ.
Frequency & Gain GNSS Port 5	1176 MHz (L5) 1206-1268 MHz (L2) 1559 -1603 MHz (L1) 30 dB Gain
Operating Voltage	2.7-5.5 Vdc
Noise Figure	1.5 typ.; 2 max
Polarization	RHCP
Cable, Input	RG-174/U
Mechanical Specifications	
Vibration	AARL/MIL-STD 810
Ingress Protection	Dual Seal IP66
Radome Material, Color	ASA, UV Resistant, Black
Mount Type, Dimension	Direct Hole Mount, 3/4" (19.05 mm)
Height x Diameter	1.5 in. (38.1 mm) x 5.5 in. (140 mm)

4x4 Wi-Fi 6E MIMO Antennas



EM-AG50003 Series

Available Configurations
2x2, 4x4 WiFi 6E MIMO
GNSS or Non-GNSS Options

Electrical Specifications	
Frequency & Gain Port 1-4	2400-2500 MHz; 1-2 dBi typical 5100-5835 MHz; 1-3 dBi typical 5850-7125 MHz; 1-3 dBi typical
VSWR Port 1-4	<2:1
Impedance All Ports	50 Ohm Nominal
Isolation, Port to Port (1-4)	>10 dB; >20 dB, typical
Frequency & Gain GNSS Port 5	1559 -1603 MHz (L1) / 30 dB Gain
Operating Voltage	2.7-5.5 Vdc
Noise Figure	1.5 typical; 2 max
Polarization	RHCP
Cable, Input	RG-174/U
Mechanical Specifications	
Vibration	AARL/MIL-STD 810
Ingress Protection	Dual Seal IP66
Radome Material, Color	ASA, UV Resistant, Black
Mount Type, Dimension	Direct Hole Mount, 3/4" (19.05 mm)
Height x Diameter	1.5 in. (38.1 mm) x 4.75 in. (121 mm)

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